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ABSTRACT

After a brief overview of the size and nature of illicit drug use observed among American adolescents and young adults over the past 20 years, this paper argues that the nation's reliance on supply reduction as its primary strategy for controlling drug abuse has been unsuccessful. Of the two approaches to demand reduction--coercive techniques versus changing beliefs, attitudes, and norms--the latter, and primary prevention in particular, are judged most promising. The paper discusses three essential components to the process of early intervention: idea generation, program development, and systematic evaluation. The report examines the two most far-reaching current approaches to prevention--school-based programs and media-based efforts; the report then offers recommendations. The study also presents a number of specific ideas for expanded approaches to prevention. These include emphasis on health and other risks associated with various substances; early creation of parent groups; recreational alternatives for adolescents to "partying" organized around substance use; systematic attempts to change norms among adolescents regarding drug use; and a serious societal response to the adverse effects of widespread alcohol and cigarette advertising. The drug-related beliefs and attitudes of young people are examined, and procedures for changing those beliefs are suggested. (TE)

# REDUCING DRUG USE IN AMERICA:
# A PERSPECTIVE, A STRATEGY, AND SOME PROMISING APPROACHES

A paper commissioned by the United States Department of Education

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## Abstract

The paper begins with a brief overview of the size and nature of the epidemic of illicit drug use observed among American adolescents and young adults over the past two decades. It is argued that the nation's reliance on supply reduction as its primary strategy for controlling drug abuse has been, and will continue to be, in the main unsuccessful. The major alternative strategy, that of demand reduction, has received far less emphasis despite its far greater promise. It is recommended that a substantial shift in emphasis between these two strategies needs to be made.

Within the general strategy of demand reduction, two quite different approaches are distinguished--coercive techniques versus changing beliefs, attitudes, and norms. The risks and benefits of each approach are considered. Primary prevention and early intervention, using non-coercive techniques, are the strategies judged most promising.

There remains, however, the question of how to develop, and further to demonstrate the effectiveness of, many more such techniques. It is argued that there are three essential components to the process--idea generation, program development, and systematic evaluation. New heuristic approaches are needed to expand the process of idea generation, and some are put forward. A much increased emphasis on the rapid and systematic evaluation of the ideas so generated is also strongly recommended.

The two most far-reaching existing approaches to prevention--school-based programs and media-based efforts--are examined. Both coverage and impact, as rated by students, are considered; and recommendations are offered.

Finally, a number of specific ideas for new and expanded approaches to prevention are offered by the author. Among them are the continued emphasis on the real health and other risks associated with various substances, despite criticisms of this approach in recent years; the development of a model for the early creation of parent groups which mirror the peer friendship groupings of their children; the development of recreational alternatives for adolescents to "partying" which is organized around substance use; systematic attempts to change norms among adolescents in regard to drug use; and a serious societal response to the adverse effects of massive and virtually unfettered advertising of alcohol and cigarettes--the two initial "gateway drugs." The beliefs of young people about the drug using behaviors and attitudes of key role-model groups is also examined, and procedures for changing those beliefs are suggested.

## Introduction

A meaningful discussion of how to develop more and better techniques for preventing illicit drug use best follows some review of what the nature of the problem is, how it came about, and how the strategies and programs we have adopted for controlling it seem to be working. Following brief sections on these background considerations, some recommendations are offered for improving the *process* by which new ideas for prevention are put forward, refined, and evaluated--since in the end the process is probably more important than any given proposal. Finally, several specific approaches are suggested.

## The American Epidemic of Illicit Drug Use

While more detailed epidemiological descriptions are available elsewhere (e.g., Johnston, O'Malley, and Bachman, 1987a; Miller et al. 1983) a broad outline of the contours of the epidemic is useful for setting the stage for a discussion of prevention policy. Illicit drug use in North America reached epidemic proportions in the late 1960's; in the 1970's the epidemic expanded considerably. In the first half of the eighties we have seen the overall epidemic recede considerably, with the notable exception of cocaine. Cocaine use climbed further among adolescents in the eighties, remained at peak levels among young adults in their early twenties, and climbed some among older adults (Clayton, 1986; Johnston, O'Malley, and Bachman, 1987). Only in 1987 did cocaine begin to show any decline in use.

A number of these points are illustrated in Figures 1 through 5. Figures 1 and 2 show the national trends in marijuana use and for other illicit drugs, taken collectively,

for high school seniors and lower grade levels. Figures 3 and 4 show the trends on the same drugs in recent years among college students and their age-mates one to four years beyond high school. (All are high school graduates.) Figure 5 shows recent trends in cocaine use for high school seniors and young adults in their twenties who are high school graduates. What it does not show is that, while usage rates remained fairly stable between 1980 and 1986, a particularly dangerous form of ingestion--smoking cocaine--rose appreciably from 1983 to 1986 due to the rapid rise in crack use.

These data, like most of the other data to be presented in this paper, derive from the ongoing series of surveys entitled, Monitoring the Future. This series was begun in 1975 and is conducted by the University of Michigan's Institute for Social Research under research grants from the National Institute on Drug Abuse. (Johnston, O'Malley, and Bachman, 1987). Each year a nationally representative sample of roughly 17,000 high school seniors in about 135 high schools are surveyed in their classrooms using self-administered questionnaires. They report on their use of a wide array of licit and illicit drugs, as well as on a host of related factors. Figures 1 and 2 are based on seniors' retrospective reports of what grade they were in when they first used each drug. Figures 3 and 4 derive from follow-up surveys, conducted annually by mail, of a subsample of the participating seniors in each graduating class--about 1,000 per year per class. (All samples thus omit high school dropouts, whom we know to have higher than average rates of substance use.) The follow-up surveys have high retention rates (still over 70% of the original panel after 10 years), and the data from these are reweighted to correct for the effects of attrition. (See Johnston et al., 1987a). An excellent national sample of about 1,100 college students is encompassed in the follow-up surveys.

The extent to which the drug epidemic penetrated the adolescent population in America has been illustrated by Figures 1 and 2, which show that for seniors lifetime prevalence rates for marijuana have reached over 50% for some years now. (Lifetime

prevalence refers to the proportion having used once or more in their lifetime, while annual prevalence refers to the proportion using once or more in the prior twelve months.) As many as 40% of students have tried illicit drugs other than marijuana during high school. Figure 6 shows the degree of penetration among the young adult population in 1987. (Note that these data are not cross-time trends but age group comparisons for a single year.) It shows that roughly 80% of high school graduates in their late twenties have tried an illicit drug.[1] The lifetime prevalence for cocaine reaches 40% for this age group (data not shown).

While the drug epidemic left the confines of our shores early in this twenty-year epidemic to become a global pandemic, other industrialized nations never attained such large proportions of their young people being involved as has the United States. Neither do their current levels of illicit drug use--and in particular cannabis and cocaine use--even begin to approach the levels found in North America today (Johnston and Harrison, 1984; Smart and Murray, 1981).

Within two decades--decades which spanned a very turbulent period in American history--illicit drug use grew from a rare and deviant behavior among American young people to a statistically normative one. The epidemic spread from the nation's campuses, to others in the same age groups, and then down the age spectrum to high school students and eventually to junior high school students.

The spread of the epidemic up the age spectrum was much less dramatic, as older generations held onto their earlier norms; and what change has occurred in older age bands has occurred largely through generational replacement (Miller et al., 1983). This clearly suggests that adolescence is a critical period for the establishment of these drug-using behaviors, much as is true for cigarettes and to a somewhat lesser extent alcohol.

1The adjusted lifetime prevalence takes into account use reported by the individual in earlier surveys which is not reported in the current survey.

At the present time, the age groups having maximum illicit drug use are those in their late teens and early twenties. Cocaine is the only one of the illicit drugs to show a much higher rate of use among those in their twenties versus those in their late teens (Johnston, O'Malley, and Bachman, 1987; O'Malley, Bachman, and Johnston, 1984; Yamaguchi and Kandel, 1984). See also Figure 5.

Cigarette smoking has been shown to be strongly associated with all forms of illicit drug use, and particularly with the use of marijuana (Johnston, 1973; Johnston et al., 1987; Miller et al., 1983), so efforts which are successful at reducing smoking may have the serendipitous secondary effect of reducing illicit drug use. While it is doubtful that all, or even most, of that association is due to the direct causal connection between them, very plausible hypotheses can be generated as to why some of the connection is likely to reflect a causal link (Johnston, 1986). Cigarette smoking among high school seniors dropped by roughly one-third between 1977 and 1981, followed by much slower decline through 1984. Since 1984 there has been no further decrease.

While there have been some long-term consistencies in the drug epidemic, such as the widespread popularity of marijuana and the tendency of young people to go through a certain predictable sequence of drugs before moving into the "harder drugs" (namely the use of cigarettes, alcohol, and then marijuana), the epidemic is also noteworthy for the wide fluctuations in the popularity of particular substances. For example, both PCP and methaqualone showed a rapid increase and then just as rapid a decrease in popularity during the past ten years. Daily marijuana use did much the same, but over a longer p. iod: daily use among high school seniors stood at 6% in 1975, 11% in 1978, and 3% in 1987. Cocaine showed a dramatic increase in popularity late in the epidemic, and is about the only class of illicit drug to resist the decline of the past five or so years. Regardless of which combination of different illicit drugs has been in vogue at

a particular time, however, the individual correlates of use have tended to remain pretty much the same (Bachman, O'Malley, and Johnston, 1986).

Many individual risk factors have now been identified--too many to be discussed here--but clearly central among them are poor adjustment in school and a more general pattern of deviant behavior. A low level of religious involvement and spending a lot of time out of the parental home have also been strongly correlated factors. However, shifts in these individual risk factors can hardly account for the wide fluctuations in drug use observed in recent years, since these factors have not fluctuated very much themselves, according to results from the Monitoring the Future studies (Bachman, et al., 1988), and most of them probably cannot be socially manipulated to any great degree in any case. The importance of these facts for our approach to prevention is considerable, since it suggests that gaining a better understanding of individual differences in susceptibility (whether genetic, constitutional, or in personality), is not likely to lead to major solutions to the nation's drug problem. It seems clear that broad cultural and societal factors have led to the epidemic and, therefore, will also be critical to achieving any major reductions in the epidemic.

The causes of the onset and partial retreat of the drug epidemic are surely multiple and complex. While some are hard to prove empirically, the following interpretations are offered. In the sixties Timothy Leary and other proponents of mind expansion, inner-directedness and "dropping out," saw a convergence of their messages with the breaking of the achievement bonds of "the silent 50's." There was a generation ready for the message. Further, social control by the family of children and adolescents was being eroded as divorce rates increased and a much larger proportion of mothers entered the labor force. The surrogate socializing agents--namely the media--have much less motivation to be concerned about what values and attitudes they are imparting to the next generation than do parents. Their primary motives, after all, are to sell programs and sell

products, regardless of what it takes. The effects of these structural changes in the social control and socialization systems were then compounded by a major demographic change: the baby boom was reaching adolescence and by its sheer size was placing stress on the ability of the educational and social control mechanisms of the society to function effectively.

Several major historical events coincided in time with these structural and demographic changes, and their cumulative effect was appreciable. Specifically, the advent of the Vietnam War and other subsequent politically and socially alienating events, like Watergate, had a tremendous catalytic effect on the popularity of drugs. The use of certain illicit drugs became both a symbol of defiance of "the system" and the older generation, as well as a symbol of solidarity among those of like mind (National Commission on Marijuana and Drug Abuse, 1972; Johnston, 1973).

As the somewhat naive earlier views of the dangers of drugs were challenged by both scientific and experiential evidence of the adverse effects of many drugs, young people began to back off selectively. Methamphetamine use diminished as the word got out that "speed kills." LSD lost some popularity in the early seventies as reports of its effects on the brain and on chromosomes, whether well-founded or not, spread. Daily marijuana use fell by more than half, accompanied by a dramatic rise in the proportion of young people perceiving such use as carrying appreciable risks for the user (Bachman, et al., 1988; Johnston, Bachman, and O'Malley, 1982; Johnston, 1985a). PCP use fell very quickly in the late seventies as its reputation on the street as a dangerous drug grew.

But certainly other factors also played a role in the reversal of the overall epidemic. Among those which seem most plausible were the passing of the Vietnam era; the wearing off of the "fad" quality of drug use; the sobering influences of the recession of the early eighties and the shortage of entry level jobs for the baby boom generation,

which led to more concern with job attainment and thus school performance; and the whole healthy lifestyle movement (Johnston, O'Malley, and Bachman, 1987b).

But while some of those, and perhaps other factors, may cause the epidemic to recede even further than it has, two major changes make it highly unlikely that this country will ever be able to attain the very low levels of illicit drug use seen in the 1950's. First, the vast production and supply network which now exists will make drugs accessible to American young people for the indefinite future. Second, there is now a widespread awareness among American youngsters of a whole range of chemical options for altering mood and consciousness. This was an awareness which surely did not exist in the fifties. In addition, the process of natural correction in use which occurs as the dangers of a drug become established and widely known, is overcome in the aggregate by the continual introduction of new allegedly "safe" drugs. Cocaine is a fairly recent example from the seventies, "ecstasy" (MDMA) a more recent one.

In recent years, there have also been changes in the purity of some of the more important drugs as well as in the methods by which they are ingested--changes which generally have meant that drug use is becoming more dangerous. "Black tar" heroin from Mexico is a very pure form, contrasting to normal street heroin which often is only 5% pure in the American market; thus more overdose deaths result. Cocaine is now available in an inexpensive "crack" form--a smoked form which is purer than the normal powdered form of cocaine hydrochloride, and which thus can result in a much more rapid addiction, as well as more frequent overdose. Marijuana is also reported by the Drug Enforcement Administration to be considerably stronger than ten years ago, although the importance of this for the user is yet to be determined, since users may well titrate their intake to get a desired level of effect. (In fact, national data from high school seniors suggest that there has been some decline in both degree and duration of the high usually obtained with marijuana. See Johnston, O'Malley, and Bachman, 1987a.)

In 1985 the decline in the use of most drugs appeared to have stalled among high school students and young adults (in fact, the active use of cocaine was rising), serving as a reminder that continued improvement cannot be taken for granted. Fortunately in 1986, the downturn resumed and in 1987 even cocaine showed the first signs of a turnaround. Usage rates in this country are still very high by long-term historical standards, as well as by comparisons with nearly all other countries in the world (with the exception of neighboring Canada). Thus, continuing to attempt to reduce the use and abuse of drugs remain a pressing item on the national agenda, and seems likely to remain so for the foreseeable future.

## Supply Reduction Strategies vs. Demand Reduction Strategies

Virtually all approaches to the drug abuse problem may be categorized as attempts either to reduce the supply of drugs or to reduce the demand for drugs. Supply reduction strategies range from foreign policy efforts dealing with other governments (e.g., the recent crop eradication efforts in Bolivia, and crop substitution in Southeast Asia), to interdiction and border control, to techniques for the apprehension of suppliers and dealers as well as prosecution and punishment policies for them (e.g., seizure of assets laws). Demand reduction strategies, on the other hand, attempt to alter factors in the individual or his/her environment that predispose, stimulate, reinforce, or enable his/her drug using behavior. These strategies range from deterrence efforts based on law enforcement, to attempts to change individual knowledge, skills, and beliefs, to attempts to alter conditions in the social or cultural environment which support or contradict drug use.

Only limited attention will be given here to the specifics of supply reduction strategies, partly because it is this side which has received a very disproportionate amount of the attention in comparison with the complementary side of demand reduction.

Indeed, it seems that the most serious and overarching policy issue in the drug abuse field has to do with the balance in resources and emphasis addressed to supply reduction and control vs. demand reduction and control. What follows is an overview and critique of current supply and demand reduction approaches.

## Supply Reduction

Policy issues surrounding the drug abuse problem are quite different than those related to the use of other consumable and abusable products, in that most of the illicitly used drugs are not legally manufactured, nor sold or distributed through legal channels to their ultimate consumers. Therefore, many of the points of policy intervention dealing with quality control and manufacture, labeling, advertising, point of purchase controls, taxing and pricing, etc., are beyond the normal span of governmental influence. This situation contrasts vividly, for example, with legal consumer products such as cigarettes or alcohol. On the other hand, with illegal drugs there exist some qualitatively different policy issues, having to do with attempts to eliminate the illicit production and the illicit supply systems.

It seems that there is an almost universal governmental reflex to try to solve the drug problem with supply-reduction, law-enforcement approach, not just in the United States, but in most countries. (Insofar as demand reduction is part of the strategy, it is again in the law enforcement mode, with the emphasis on catching and punishing users.) It also seems that in most Western democracies this reflexive approach has been relatively ineffective, for reasons which seem clear after some thoughtful economic analysis.

After all, drugs constitute a consumer market, albeit an illicit one, in which operate the same forces of supply and demand found in most markets. Basic economic theory posits that when demand for a product expands, prices will rise, and the supply

will expand to meet it (assuming that there is not a controlling monopoly or oligopoly) either as a result of current producers increasing production and/or as a result of new producers entering the market. When the market is extremely profitable, there will be a rush of new producers entering. They will tend to flood the market with the product, and prices will tend to decline as suppliers compete with one another for market share and for optimizing their individual profits. That is exactly what has happened with cocaine in this country, for example.

It is common knowledge that the profit level in the illicit drug market is utterly enormous--in the tens of billions of dollars. Therefore, from basic economic theory it seems predictable that there will be a continuous flow of new producers, wholesalers, and retailers scrambling to attain those enormous profits, until the profits get so low that they are not worth the costs (including the legal risks) of entering the market. It seems highly unlikely that profits ever will get that low in a Western democracy, where the most draconian measures are shunned, as long as there remains an appreciable demand; thus there is likely to be an endless supply of suppliers. Indeed, many people who might otherwise have been law-abiding citizens have found their price and have decided to enter this highly profitable illegal trade.

With regard to international production, the fact that a fair proportion of the world's countries are not under serious international control means that production can always move beyond our international reach. Witness Afghanistan, Iran, Lebanon, and the Eastern bloc countries. Further, even some countries with a genuine commitment to international cooperation may not be able to eradicate production within their own borders, due to a lack of control over certain remote regions (e.g., Thailand, Burma, Colombia, Peru, and Bolivia). Thus, attempting to eliminate the supply through international efforts may show some short-term successes (e.g., as in Turkey and Mexico); but in the longer term, replacement supplier countries will continue to enter the

market. Even in the highly unlikely event that we managed to attain a kind of global control on the production of natural drugs, such as opium and cocaine, the potential for chemical analogues is such that these natural drugs surely would be replaced by synthetics; and the control of synthetic drugs can be even more difficult, since the means of production are so much less visible.

In sum, despite dramatic efforts, and very large-scale investments of energy and resources by governments, it seems likely that we will not succeed in reducing significantly the production of drugs at the world level as long as the demand--and thus vast profits-- remain. Indeed, we have escalated our own expenditures on supply reduction dramatically in recent years, at the very same time that availability has increased in the United States (Drug Enforcement Administration, 1987; Johnston, et al., 1987). See Figure 7 for the relevant data for high school seniors.

It does not follow from this analysis that supply reduction is a strategy which should be abandoned. Undoubtedly we must continue to try to suppress the production and distribution of drugs. The major point is that by focusing almost exclusively on trying to win the unwinnable battle of supply reduction, as a society we largely have neglected the battlefield on which we could win the war, namely the battlefield dealing with the demand for drugs.

## Demand Reduction

*Coercive Techniques.* Society has traditionally attempted to reduce the demand for drugs through policy strategies based on legal deterrence and other social control mechanisms. Two such policy initiatives have included changes in the legal status of certain drugs and recent initiatives to identify drug users through urine testing.

Deterrence through legal sanctions has been the most widely used approach for attempting to discourage the use of illicit drugs: such drug-using behaviors are rendered illegal by the state, and appreciable punishments are prescribed for infractions. The degree of enforcement effort, and the ability of authorities to successfully apprehend and punish those who break the law, obviously are critical moderating variables in determining the deterrent potential of the legal approach. So are the visibility of the behaviors in question and the willingness of the general public to report infractions of the law and to cooperate in prosecution.

In general, local law enforcement agencies have not placed a very high priority on the apprehension of drug users (as opposed to dealers). This may partly be because users are often seen more as victims than victimizers, but surely it is partly because of the extremely high numbers of users in recent years, in conjunction with the related fact that many are otherwise law-abiding citizens. Add to these the additional factors that (a) drug use is easily concealed and (b) that within certain age groups the norms have been sufficiently tolerant of drug use that there has been little cooperation with law enforcement, and it should come as no surprise that legal sanctions have not been spectacularly successful.

In the 1970's there was a far more active controversy than exists today about the proper legal status of drug use. Specifically, there was a strong demand for decriminalization of marijuana, which was the drug that received the most attention by public officials and the media during that decade. The arguments for decriminalization were numerous; but central among them was the notion that apprehending, arresting, and giving criminal records to large numbers of American young people, who otherwise were law-abiding citizens, was not in the public interest. (In the peak years arrests for marijuana possession were averaging around 400,000 per year.) The major counter-

argument was that the arrest and conviction of drug use offenders would help to deter the use of the drug among young people, in particular.

As it happened, a natural experiment occurred in the country, as a result of the fact that these laws are determined primarily at the state level. Some states decriminalized marijuana use, while the majority of states did not. Since the Monitoring the Future study was already ongoing, it provided the basis for a prospective study in which drug use before, during, and after decriminalization in the states which decriminalized could be compared with usage trends in the states which did not decriminalize. The results indicated that decriminalization during that period had virtually no effect on the levels of drug use among young people, nor on their attitudes and beliefs about drugs (Johnston, O'Malley, and Bachman, 1981). This failure of the change in the law to affect even attitudes and beliefs strongly suggested that there would be no longer-term effects on use, either. Other retrospective studies of decriminalization in particular states have come to much the same conclusion. There are questions, or course, about whether the rates of enforcement and prosecution, even in those states where use remained illegal, were such as to provide very much contrast to the decriminalized states; but it can be said with near certainty that, within the range of state policies that then existed, there was no evidence of a differential result coming from active decriminalization of marijuana.

Only limited generalizations can be made from such a conclusion, however. Marijuana was, after all, a very widely used drug among young people, and one which was widely accepted and consistent with the existing social norms of their age group. Thus, the symbolic impact of decriminalization would be expected to be very limited in that historical period.

It also should be noted that decriminalization and legalization are quite distinct things. The production, distribution, and sale of marijuana remained illegal even in

decriminalized states, no advertising was possible, and so on. Recent calls by some social commentators for the legalization of drugs would involve a qualitatively quite different social action. Complete legalization likely would have a considerably greater impact on use than decriminalization, partly because the use of most other drugs remains highly illicit in the society and contrary to social norms (even among youth) and partly because legalization constitutes a far greater liberalization of the law. Under legalization, all of the policy issues having to do with production, labeling, advertising, purchase restrictions, taxation, etc. would suddenly become germane.

*Demand Reduction Based on Changing Attitudes, Beliefs, and Norms.* So far, the demand reduction techniques discussed have been those which rely entirely on the use of negative incentives or reinforcements--including techniques for apprehension and punishment. These approaches are not aimed at changing the person, but rather at changing the contingencies presented by the environment as a result of drug use, and the probability that the consequences will be incurred. Their success relies largely on the extent to which drug using behaviors in the population can be monitored, since the desire for compliance is not internalized by the individual. There is, however, an important additional class of interventions which do aim to change the person, and they are often spoken about under the rubric of prevention. The so-called prevention approaches have been at times classified into three levels: primary prevention (which means reaching people before they ever start using drugs or a drug); secondary prevention (which means intervening early in the drug involvement process, before the users become dependent or chronic users of the drug); and tertiary prevention (which means dealing with people who already have an established drug abuse problem, i.e., treatment). Primary prevention, early intervention, and treatment are the terms now more in vogue for these three levels.

To deal with the last first, of the three types of prevention approaches the treatment of drug abusers has been the dominant focus of demand reduction to date.

However, treatment may be seen as the result of a society's failure to succeed at, or even to attempt to implement, the first two stages of prevention. It is dealing with the casualties; and it is a very expensive approach with rather limited success. While treatment of most drug abusers seems well worth society's investment in terms of pay-back in productivity, reduced crime, and now in terms of AIDS prevention, it is nevertheless very expensive per case and even more expensive per successful case. Recidivism rates tend to run high, approaching and often exceeding 50%.

So-called secondary prevention, or early intervention, would seem to hold promise in that those most at risk for drug abuse have begun to identify themselves by their early involvement, and thus scarce resources can be focused on those most "at risk" of developing a serious problem. The drawbacks in this approach, of course, are that the early users are not that easily identified and engaged in the intervention process, and further many are already well on their way to serious involvement with drugs and/or with dysfunctional social groups, making successful intervention more difficult. Nevertheless, this appears to be an area in which some creative and positive approaches could be developed for early identification and intervention.

Primary prevention might be thought of in two subclasses--selective and global. Selective primary prevention occurs when individuals or groups, judged to be at high risk for reasons other than their actually using drugs, are identified and resources are focused on them. The second category, which might be called global primary prevention, exists when all people in a population group are provided an intervention, whether or not they show indications of being prone toward drug abuse.

Given the extremely widespread nature of drug use among contemporary American youth, it would seem that global drug abuse prevention efforts are highly justified at the current time, and perhaps for the foreseeable future. Further, they need to start at a very early age given the age at which illicit drug use begins (see Figures 1 and

2). More focused or selective drug abuse prevention efforts may additionally make sense, even in the presence of global ones, however. In general it would seem that we should be exploring demand reduction using all of these types of approaches. As is discussed below, new mechanisms to increase the generation and refinement of additional approaches to primary and secondary prevention would be extremely valuable. Indeed, mechanisms which would bring about a realignment of the federal strategy to place a higher level of resource allocation on the development of a knowledge base for primary and secondary prevention seem to this author to be essential.

## Building a Knowledge Base for Prevention

Intervening successfully to prevent or ameliorate social problems is a high risk venture. If one takes Donald Campbell's (1969) notion of "an experimenting society," one comes to see most knowledge on social engineering, or social intervention, as developing through a process of trial and error with evaluation. Of all the seemingly good ideas for preventing drug abuse (or for intervening in most other non-adaptive behaviors) probably 70-90 percent will prove either ineffective, or actually to result in adverse consequences, for reasons that are simply beyond the ability of the theoretician or social planner to forecast. (This seems now to be the verdict on most of the "good ideas" for drug abuse prevention that were popular into the seventies, like the "information approach" and the "alternatives approach" (e.g., see Schaps et al., 1981.) If one accepts this assumption, it means that it is critical to implement as many of the most promising ideas as possible in experimental designs, to evaluate them as rapidly as possible, and to identify the minority of programs that do work. Those programs can then be disseminated widely. Most important, the majority of programmatic intervention funds, which otherwise would have been wasted on ineffective programs can be used on the effective ones.

Three key stages to such an experimental approach to building a knowledge base can be distinguished: idea generation, program development, and systematic evaluation. The chapters being contributed to the current volume, for example, all fit into the idea generation stage. The position is taken here that all three stages are critical to the development of a knowledge base, and that the process by which we have been developing that knowledge base should be a high priority subject for focused attention. In particular, the issues of resources and strategy need to receive consideration.

The overall strategy I would recommend is that we greatly increase the rate at which new prevention approaches are being developed, built, and refined into programs which can be implemented and evaluated in (often large-scale) systematic research designs. This will require a different scale of resources being allocated to knowledge development in the field, additional institutional mechanisms to expand and improve the process, and sustained attention and support.

**Idea Generation**

Regarding the first stage--that of idea development--an overall examination of the literature suggests to this author that (a) the range of ideas which have been put forward and tried for preventing drug use has been very limited in contrast to the range of interventions which might be developed and judged promising, and (b) most of those which have received serious, systematic evaluation so far have not shown evidence of a great deal of effect. I do not conclude from the latter assertion, by the way, that nothing effective can be done--only that we have not made an adequate effort to find the "right" answers.

How might we increase the production of new and promising approaches? The commissioning of papers like the present ones is one approach, and I applaud it; but we cannot rely on one-shot strategies. There needs to be a well-thought-out, ongoing

process. I would argue that one structural mechanism to help assure such an ongoing process would be the creation of several ongoing Prevention Development Centers, which would have idea development as their primary mission. They could have resident and visiting scholars, like most think tanks, and could commission papers; but I believe they should also make use of the practical knowledge and insights of people who are (or have been) in many of the social roles that touch on the drug abuse problem. The notion would be to bring together people from roles such as the following: youngsters who have (had) drug abuse problems, youngsters who have managed to avoid drug use, parents of both types of youngsters, drug abuse counselors, teachers, school counselors, youth workers, and so on. The purpose is to draw upon their knowledge and insights, using groups of various permutations of such roles to develop new perspectives--much as advertising agencies use "focus groups" to develop an understanding of how people feel about a product, why they might buy it, what forces influence their decisions, and how they would react to various advertising interventions. People from such roles could be brought together for short sessions of a day or less, or for longer ones of a weekend, week, or more. Whatever heuristic devices (e.g., the Delphi technique) are judged by the center staff to be promising should be tried. The main point is that an organization, and a set of professionals (as well as non-professionals) is given the sole task of generating new approaches to prevention.

I could imagine that some of the most valuable ideas to be generated might relate to ways in which adolescents themselves structure their activities, social groupings, and reward structures so that (a) there is less pressure to use drugs and alcohol, (b) there are attractive social alternatives to "partying," (c) there is less reward associated with it, and (d) there are some social penalties. Developing effective ways for coopting young people into helping to solve their own problems would be a primary goal, I would hope.

It would also seem likely that some models might emerge for intervening in parental and family systems. How might the influence of older siblings be used constructively, and how and when might parents organize among themselves. Despite all the work of the existing parent group movement, I think parents are organizing too little and too late--a point to which I return below.

Effective ways for recording and communicating the most promising of these ideas would need to be developed; and the reports resulting from the centers should be placed in the public domain, so that anyone moved to develop and implement one of the ideas is immediately free to do so.

**Program Development**

Klitzner (1987) and others have argued convincingly that often not enough time is devoted to the intermediate stage of program development, before summative evaluation of an approach is undertaken. I would agree with this observation. Developing, pretesting, and further refining a program built on a general idea for a prevention intervention is an important and sometimes difficult stage in the process--and adequate time and resources need to be made available for all of this. The recently created Office of Substance Abuse Prevention (OSAP) within ADAMHA now has significant funding available for demonstration projects in prevention, though more might be usefully allocated for this purpose from within the Department of Education, as well. One would hope that a number of the new ideas to emerge from the Prevention Development Centers would be put forward for the funding of program development. Since this is not an area with which I have a great deal of first hand experience, I am not sure whether any special institutional mechanisms--such as Program Development Centers--might be facilitative or not. It is, of course, possible that this stage of work could be encompassed by the Prevention Development Centers, just discussed.

## Program Evaluation

To properly evaluate social interventions often required appreciable time, resources, and technical expertise. As a matter of general policy, I think that we should be sure that all these are made available, given the seriousness of the drug abuse problem in the country. To date, the Federal resources available have been inadequate to the task. OSAP is prohibited by its enabling legislation from sponsoring evaluation research. NIDA has had relatively insignificant funds for such purposes. The net result is that the area is relatively moribund, and some significant scholars have become disaffected and left the area. There is a clear need for a vigorous Federal effort in this area--one which logically might be shared between NIDA and DoE.

## The Need for Sustained Attention and Support

It is a pervasive flaw in American thinking that we act for the short term and let the long term be damned. Significantly increasing the knowledge base is a long-term process, and we need to think of it that way. Making matters even more difficult in the development of knowledge for effective social interventions, is that it requires an experimental perspective in which it is realistic to suppose that perhaps a majority of what look like "good" ideas ultimately will fail to bear the desired fruit. That means that policy makers, administrators, and scientists need to be tolerant of the unfruitful efforts and also to remain optimistic that others will prove fruitful. The field, and the effort, should not be judged barren just because many, or even most, of the approaches are. Failure needs to be seen as a necessary part of the experimental process by which we identify the most successful approaches.

Another caution concerns the danger of dismissing a general approach too quickly just because a particular incarnation of that approach proves unworkable or ineffective.

One example of such a process was the premature conclusion reached by prevention professionals in the 1970's--namely, that the risks of drugs fail to deter children from using them. The early prevention programs emphasizing the dangers of drugs were proven not to be successful, the approach was labeled "scare tactics," and in general this approach to influencing youngsters was dismissed by the field. I think this was a case of throwing out the baby with the bath water--and certainly there was a lot of bath water in the early seventies in the messages being given to youngsters about drugs. The problem was that the messages were not credible: in general younger people knew more about drugs than adults, and they began to dismiss all communications from adults about drugs as propaganda. Since then I think "the system" has gained back much of its credibility by sticking closer to the facts. Some of the evidence for this is that many more young people have come to see marijuana use as dangerous than used to, and that their actual use of marijuana has dropped appreciably. In fact, one of the most important findings from the national high school surveys has been that young people's tendency to use a drug, or to avoid using it, is on average substantially influenced by what they perceive as the dangers associated with using it. Figure 8 shows the dramatic change in the perceived risk for regular marijuana use over the period 1978 to 1987, during which daily use fell by more than two-thirds--from 10.8% to 3.3%.

Further evidence of the importance of perceived risk came in 1987, when we reported that the perceived risk for experimental cocaine use was up sharply for the first time among adolescents and young adults (see Figure 9). This change was accompanied by the first appreciable drop in active cocaine use since the study began in 1975 (Johnston, 1988).

So, the approach of emphasizing risks was valid in my opinion. It was the particular implementation of that approach during the early 70's that was not.

## Some Potential Programs and Approaches to Prevention

By way of background to this section I would say that I do not think there are any "silver bullets" available in our potential prevention armamentarium. The problems being presented are as varied and complex as are their causes. Further, techniques which may be effective with some groups in the population (defined in terms of age, sex, social class, urbanicity, ethnicity, and so on) may not be effective in others. Therefore, I believe that the best national strategy is to develop a host of different programs--preferably of demonstrated feasibility and effectiveness--which are to some degree tailored to various of the target populations.

Two global types of prevention programming, already in place and impacting large numbers of people, are school-based prevention curricula and prevention-oriented media campaigns. Therefore, I will begin this section by discussing the information available from the Monitoring the Future project concerning breadth of coverage and the judged effectiveness of those two massive programs.

### School-Based Prevention Curricula

Table 1 shows the proportion of American high school seniors in recent graduating classes who report having received drug education courses or lectures in school. It shows that in recent years a significant portion of students report having had no such experiences--from 25% to 30%. Also on Table 1 are the proportions reporting each type of curricular element while in high school. Three quarters of those having had such experiences report having films, lectures, or courses in one of their regular classes. Only slightly over a fifth of them report taking a special class about drugs. Films or lectures outside of courses are now reported by over a third of those having <u>any</u> courses or lectures, and this is the only category of such experiences which appears to be rising over time in terms of the proportion of the school population reached

Table 2 shows that, of those who received any of these curricular experiences, less than one in five (18%) thought they were of "no value" but, then, less than one in five found them of "great value." Over half (55%) thought these educational experiences had decreased their interest in trying drugs to some degree, while only two percent said it made them more interested; 43% felt it had no impact. So, in general, today's teens clearly are more favorable than unfavorable about the drug education they are receiving, if we leave aside the ones who don't receive any. Surely there can be no doubt, however, that there is still plenty of room for improvement.

None of these results, by the way, show much of any trending since the mid-1970's, including their ratings of the value or impact of what they have received. To the extent that there is any trending, it is in the direction of their giving slightly better ratings to their curricular experiences today than in the mid-1970's. If evidence of this sort is needed, it would seem to suggest that on average drug prevention curricula are of some value, that there is still an important segment of the population not reached by such curricula, that there is plenty of room for improvement in the ratings, and that there has occurred relatively little improvement in the ratings during the past ten or twelve years.

For the reasons cited earlier, it would seem that school curricula should emphasize the health risks of the various drugs (and I would include here the risks to psychological and social health, as well as to physical health). It is critical, however, that they do so in a way in which both the message and the message-giver retain credibility.

But clearly emphasis on the risks should not be the only component of such a program. In addition to trying to increase students' motivation to avoid drug use--as an emphasis on the risks is likely to do--it would seem critical to try to impart to them the social skills which would allow them to act consistently with that motivation. In essence they must be taught how to manipulate the salient contingencies--many of which are social--so that more reward than punishment derives from the avoidance of drug use.

There now exist some peer-based social skills programs which show promise in this regard (Pentz, 1988). One way in which I would like to see the notion of manipulating the contingencies elaborated is to see how students collectively, in addition to individually, might act to change the contingencies. No doubt it can be done: the question is can enough creative energy be mustered to figure out how?

Another observation I would make about school curricula is that drug-prevention components should be introduced very early (See Figures 1 and 2 for grade of onset estimates) if they are to reach youngsters before many, or worse yet some "critical mass" of them, already have begun to use drugs. Some components should probably be built into the curricula at every grade thereafter, as well, to be sure that reinforcement or "booster" effects keep occurring and cumulating.

My final comment on school curricula programs is that they should encompass the dangerous licit, as well as illicit drugs. This means at a minimum cigarettes, alcohol, and chewing tobacco. This is important because (a) these substances themselves pose very significant health risks for the population; (b) in order to be consistent in any prevention arguments based on health concerns, it is necessary to cover these substances; and (c) the use of these substances is highly correlated with subsequent use of the illicit drugs, likely reflecting in part a causal connection.

## Media-Based Prevention Efforts

The media by default have taken over a very significant part of this society's education and socialization of its children. With regard to both licit and illicit drug use I would say that, in general, this has been a highly unfavorable development. However, for the last year or two the media collectively have undertaken a considerable public service advertising effort to deglamorize illicit drug use. Given the clear power of the media with young people, I view this as a most constructive and promising undertaking. In 1987 for the first time, the Monitoring the Future study contained questions about such anti-drug commercials. As the results in Tables 3 and 4 show, young people seem to be getting a high rate of exposure to these prevention "spots" and to have a very encouraging assessment of the impact of these commercials on their own propensity to use drugs. Importantly, few think that the commercials have exaggerated the risks.

Since those are admittedly self reports of impacts, rather than statistically demonstrated effects, one has to be cautious about interpretation. Nevertheless, given the low propensity of most adolescents to admit that anything affects them, I take these results to be highly encouraging with regard to the potential of media campaigns.

One obvious suggestion is to keep alive the current national program, most of which is occurring under the auspices of The Media-Advertising Partnership for a Drug Free America. Another might be to have local communities develop their own complementary campaigns, with the help of local advertising professionals, perhaps using the referent power of local figures. This is an approach I am currently encouraging be adopted on a trial basis by a community leadership group in Detroit called The Prevention Forum, which is sponsored by the Community Foundation for Southeastern Michigan. If a successful model could be developed, it might be imitated in many major metropolitan areas; and, as the next section discusses, changing young peoples' perceptions of community norms may be a very important part of the process.

## Perceptions of Drug Use and Related Attitudes Among Public Role Models

The perceptions of young people concerning how much illicit drug use is used, as well as how it is viewed, by important role models in the mass culture have long been assumed to be factors having an important influence on their own behavior and attitudes. Interestingly there has been rather little research on the subject. In 1987, for the first time, questions were added to the Monitoring the Future studies aimed at measuring these perceptions with respect to three important referent groups--professional athletes, rock musicians, and actors and actresses.

The results show that a substantial majority of young people believe that illicit drug use is widely practiced in all three professions, with rock musicians seen as having the highest proportion using drugs, actors and actresses the second highest proportion, and professional athletes ranking third (see Table 5). The median answer for rock musicians is the estimate that about 70% of them are using illicit drugs occasionally or regularly; for actors and actresses the median is at about 55%; and for professional athletes at about 50%. In other words, about half the seniors guess the proportion of each group using drugs to be higher, and half lower than these numbers. While I am unaware of any systematic surveys of these three populations, my own guess is that these are substantial overestimates of the prevailing behaviors in these populations.

Likewise, young peoples' perceptions of prevailing attitudes in these same three populations appear likely to be off the mark--with their perceiving much more acceptance of illicit drug use than seems likely to exist. Table 6 shows that the great majority of young people do not think there is widespread disapproval of illicit drug use in any of these three influential role-model groups. The students were also asked what proportion of people their own age strongly disapproved of "using illicit drugs (like marijuana, cocaine, etc.) occasionally or regularly?" The majority thought that less than 50% of

their age peers felt that way. Table 7 gives the actual distributions of the attitudes of their age peers, and with a little interpolation, it seems fair to conclude that most students underestimate the extent of peer disapproval.

The point for prevention strategy is that we may have a case here of "collective ignorance," which could be attacked directly through both media spots and in-school curricula. I would think many in the three professional role-model groups would be appalled to think that youngsters see their profession in the way they do and would be willing to speak in public about their own attitudes and practices regarding drugs. I think their professional associations might play a vital role in bringing about such a program, and the advertising industry might assist by volunteering their professional communications skills, as they have so generously in the past. The data provided in Tables 5, 6, and 7 might provide the needed stimulus to motivate such professional action. (They might also be used to challenge students' beliefs about prevailing peer norms.)

The other approach which might be used toward the same end is to conduct representative sample surveys of people in the three key role-model groups. Assuming that their attitudes come out quite different than young people think, the results of the surveys could be used to develop persuasive messages challenging existing misperceptions.

**Advertising of Alcohol and Cigarettes**

Considering the very young ages at which most eventual smokers begin smoking, and at which young people develop patterns of regular smoking and occasional heavy drinking (e.g., see Johnston el. al., 1987), it is difficult to conclude that the massive advertising of both cigarettes and alcohol is not relevant to preventing substance abuse among our young people. In the course of childhood each youngster is exposed to

thousands upon thousands of commercials which associate these products with many attributes of great attractiveness to young people. The annual advertising and promotion budget for cigarettes alone now exceeds two billion dollars. This author has made the point elsewhere (Johnston, 1986) that the advertising and promotion of cigarettes should be totally banned given the known dangerous consequences of the product, even when used as intended--not to mention the likely derivative consequences of smoking contributing to illicit drug use. It has also been argued that alcohol advertising should be severely curtailed for many of the same reasons (e.g., Johnston, 1985b).

Really, the advertising of these products does exactly the opposite of what existing anti-drug advertising tries to do--glamorize drug use vs. deglamorize it--and the opposite of what the activities recommended in the preceding section would try to do. That is, product advertising gives the impression that more people are consuming these drugs (and in the case of alcohol, in particular settings), than is really the case. The advertising budgets for these two drugs make all of the nation's prevention activities in the areas of illicit drugs, cigarettes, and alcohol, combined seem utterly insignificant by comparison. As long as we allow self-serving institutions in the society to urge drug use--broadly defined--upon our children, we can expect to be much less successful in any organized prevention attempts in my opinion.

## Mobilizing and Networking Parents

The drug epidemic of the last twenty years has added a new dimension of difficulty for those who must raise children. At the same time that these new opportunities and pressures to use drugs were placed upon their children, families on average became less well equipped to exert constructive social control and influence over their children. As has been mentioned earlier, the greatly-increased divorce rate and the simultaneous rise in the proportion of mothers working, has of necessity reduced parental

monitoring and awareness of their children's behavior. Having a more mobile population has surely also contributed, in that extended family are less likely now to be around to help exert adult influence; and neighbors are now less likely to know neighbors, leading to much the same result. Finally, more youngsters are physically and financially independent of their parents with fair proportions having cars and paid work.

If the erosion of family and neighborhood control has, as I have hypothesized, contributed significantly to the drug problem (as well as to other problems), one remedy is to see if there are ways to empower parents more in their parental roles and to help train them specifically to deal with this new class of problems.

Of course, because the drug epidemic is now two decades old, on average parents today probably are more knowledgeable about drugs and the drug culture than parents were in the sixties and seventies, if for no other reason than that many of them passed through their own adolescence and young adulthood during the epidemic. But knowing what to do as a parent is a different thing from having been there as an adolescent. Further, the nature of the drugs and the drug culture itself have changed considerably over these years. (See opening discussion of the drug epidemic.) Thus parents are in need of guidance, social support, and collaboration with other parents in trying to deal with the threat of alcohol and illicit drug use among their children.

There has, of course, grown up a grass roots movement of parent groups in response to this need. However, the evidence is that it has reached a very small portion of the student population. The data presented in Table 9 show that only about 2.5% of seniors say their parents are actively involved in such a group, with roughly another 5% saying their parents have previously been involved in such groups. This means that only about one in fourteen youngsters have had one or more of their parents so involved, and in many of those cases it was probably after the horse was already out of the barn that the parents became involved.

Interestingly, most students think that parental involvement in such an activity is a good idea, while very few (only about 13%) think it is a bad idea (see Table 8). The data in Table 10, which are based only on those few students whose parents have been in such groups, paints a less promising picture in that over half felt the experience had no impact on their tendency to use drugs or (in a very small proportion of cases) made them more likely to use drugs. And only about a third thought it improved their relationships with their parents. However, it must be remembered that (a) many of these youngsters were probably already involved with drugs when their parents got organized; (b) the nature of what constituted a "parent group" undoubtedly varied in the extreme; and (c) many youngsters may be inclined to judge such parental activities more negatively now, since social control is involved, than they will later.

I would argue that new models for establishing and developing cooperative parent groups should be developed, refined, and evaluated. Serious consideration could be given to the schools playing a central role in the creation of such groups when the child is entering the first year of junior high or middle school, so that the horse is not already out of the barn, and so that the expectation that parents will play a more active and cooperative role in setting rules throughout secondary school will be established early, rather than be perceived as a removal of rights if introduced in the later years. I specifically suggest the beginning of junior high or middle school because that begins the period of heaviest initiation into drug use, and also because friendship groupings are often redefined after leaving primary school.

Obviously school leaders cannot "push" parents into doing this. Thus some creative mechanisms need to be designed to get the parents to help organize them and provide the momentum themselves. The Federal role could be to help to develop and evaluate models for accomplishing these ends, and perhaps to develop a high quality set

of videotapes which could assist such groups. While I have a number of more specific suggestions for developing this approach, I will not take the time to go into them here.

A final caution. It appears to this observer that many parents shied away from involvement in the parent movement because it came to be perceived as ideologically to one side of center. The notion of parents being more actively involved in their children's lives, and in building consistent community norms, is neither liberal nor conservative at its nexus. Therefore, any implementation aimed at a broad segment of the population should probably be consciously designed to be acceptable to a broad spectrum of the population.

## Changing Norms Among Teenagers

A number of the suggestions already discussed have dealt with the issue of ultimately changing norms among teenagers. Anti-drug commercials are aimed toward this end; and one of the reasons for suggesting that cigarette advertising be banned and alcohol advertising restricted, is to help change such norms. Most school-based prevention curricula also have this as one of their goals. However, enlisting the active involvement of young people themselves in helping to "turn things around" is a particularly important goal.

One approach that has been tried is to have anti-drug clubs for adolescents. Although the number of graduating seniors who report having been in such groups has been growing gradually (see Table 11), in 1987 only about one in eight reported any past involvement themselves. (Unfortunately, we did not allocate the question space needed to get adolescents' evaluations of the idea, or of their own experiences if they were personally involved. Such research would be valuable.)

However, I should state my own concerns about potential pitfalls of the approach of anti-drug clubs. It seems to me that there is a distinct danger that the set of youngsters who get involved (a) will be among the least likely to use drugs in the first place and (b) may serve as negative reference points for the youngsters most likely to get involved--perhaps hardening the latter's defense of their own position. Admittedly, all of this is conjecture, but I do think that these possibilities should be taken seriously and researched carefully.

However, creating formal anti-drug groups is but one method for trying to enlist young people in the search for solutions. Many other approaches can and should be tried within the general experimental framework discussed earlier. Certainly the different peer groupings which emerge in the high school (like "jocks," "burnouts," etc.) need to be taken into account in the development of different approaches. What works with one type of group may not work with another, and when peer leaders or facilitators or coordinators are chosen for various approaches, their position in the subgroup structure may be very important to their potential for success.

The last point I would like to make in this discussion of peer norms concerns young peoples' expectations and alternatives for having a good time socially outside of school. At present "partying" organized around substance use is a major form of recreation for American teenagers, and "to have a good time with my friends" is one of the major reasons given for most types of alcohol and illicit drug use (Johnston and O'Malley, 1986). There is a real need for alternative activities which meet the same basic needs--and which are acceptable and attractive to youngsters--which do not involve drinking and drug use. The Prevention Development Centers referred to earlier might pursue this problem-solving task with groups of young people. Surely some promising models could be developed and/or some procedures by which young people themselves attack the problem in their own schools and peer groups.

## Concluding Remarks

The prevention ideas put forward here relate to a number of institutions and segments in the society--parents, schools, the media, advertisers, those in professions that serve as role models, community leaders, and young people themselves. This broad array is included because all of them, and still others not on the list, play a role--whether they like it or not--in either exacerbating or helping to solve the nation's drug abuse problems. To the extent many of those sectors can mobilize to help reduce drug use, I think it likely they will have a mutually reinforcing effect, since they will tend to convey the impression of a widespread intolerance for, and disapproval of, drug use. The problems, of course, are not going to go away completely, but I think it is well within practical expectations to see them very substantially reduced. I will close by restating my earlier caution that even if considerable success is attained, it is likely to require a long-term sustained prevention effort to successfully keep the problems from re-emerging.

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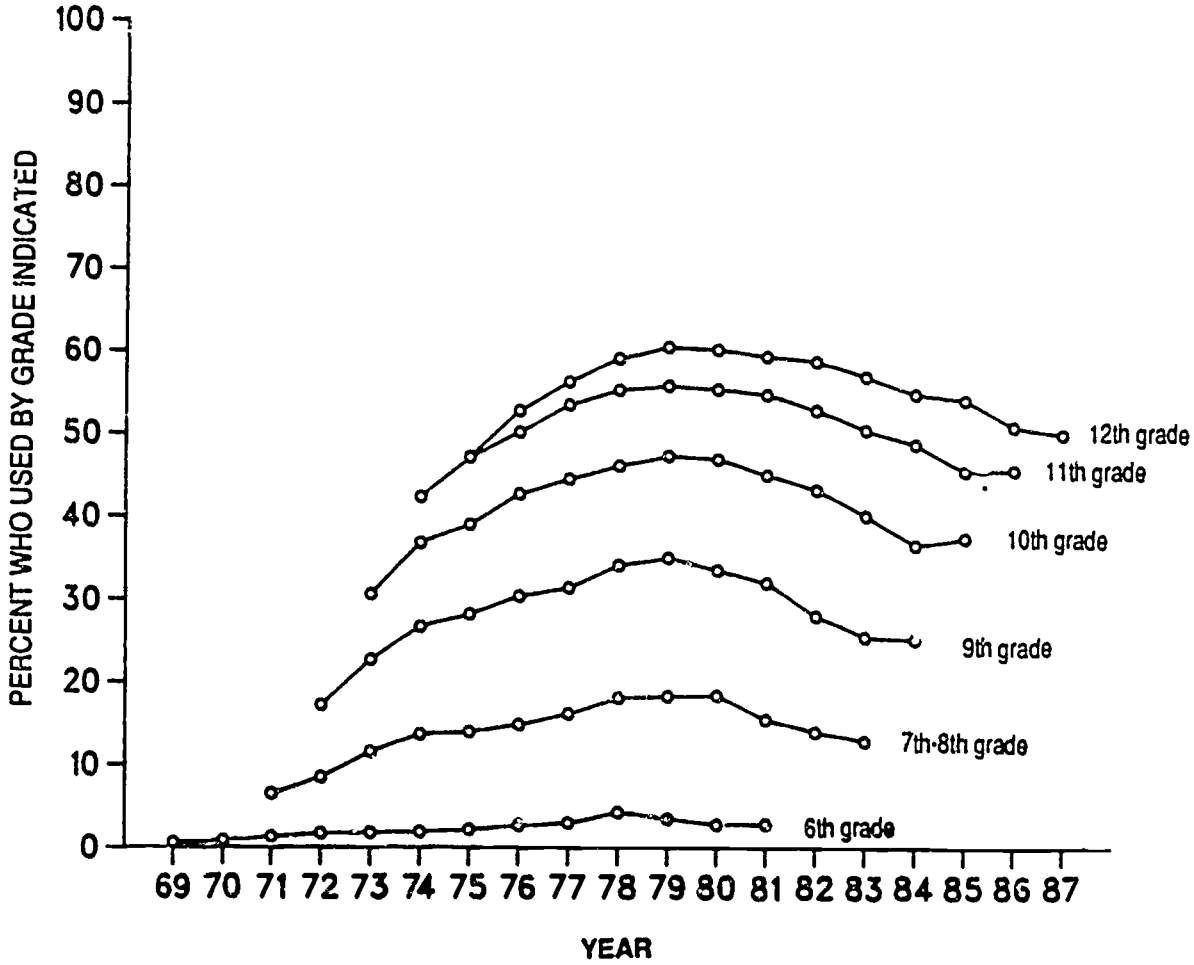
**FIGURE 1**

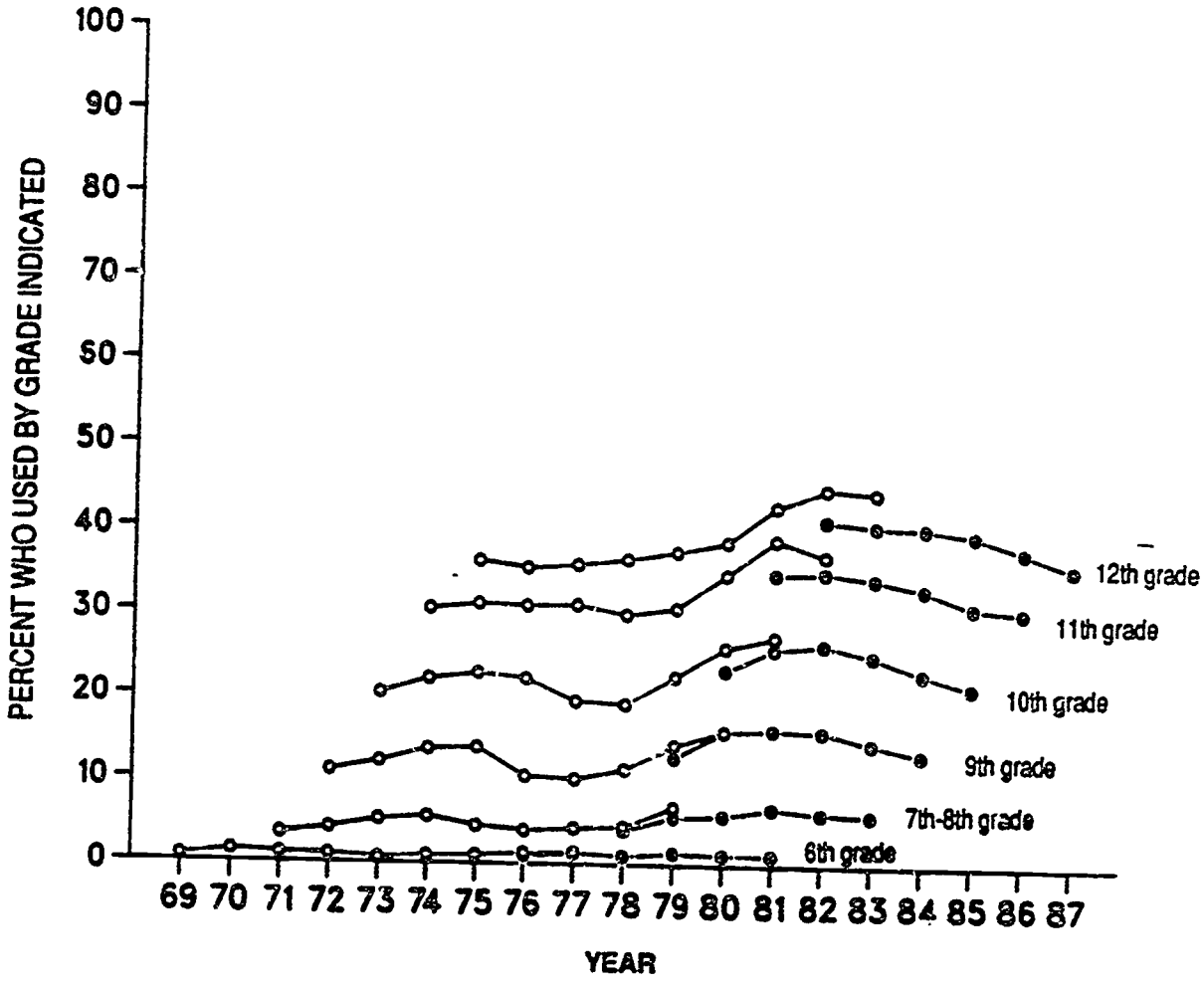
**Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## FIGURE 2

**Any Illicit Drug Other Than Marijuana:**
**Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

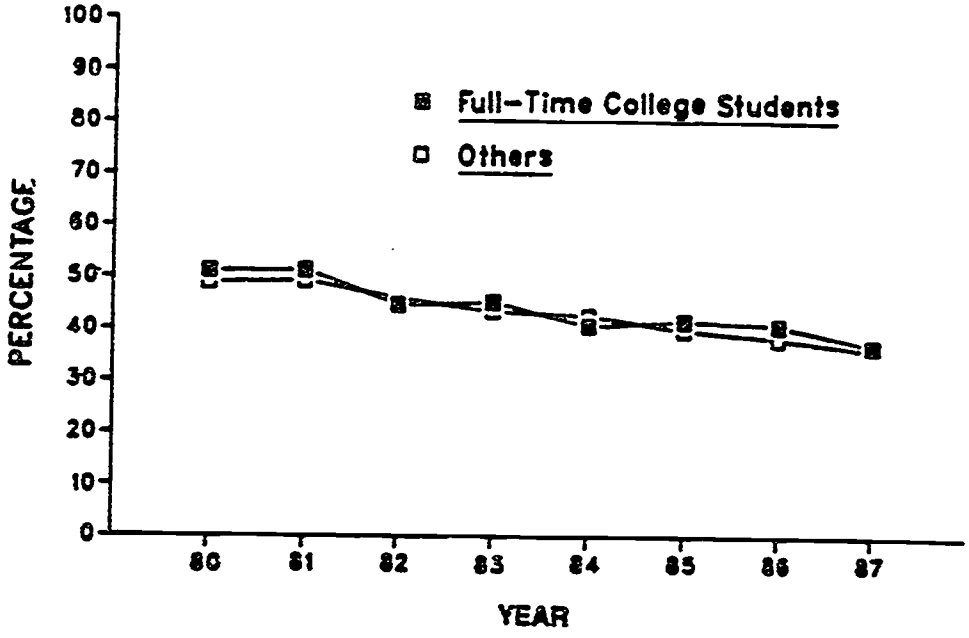



NOTE: The filled-in symbols represent percentages which result if non-prescription stimulants are excluded from the definition of "other illicit drugs."

SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## FIGURE 3

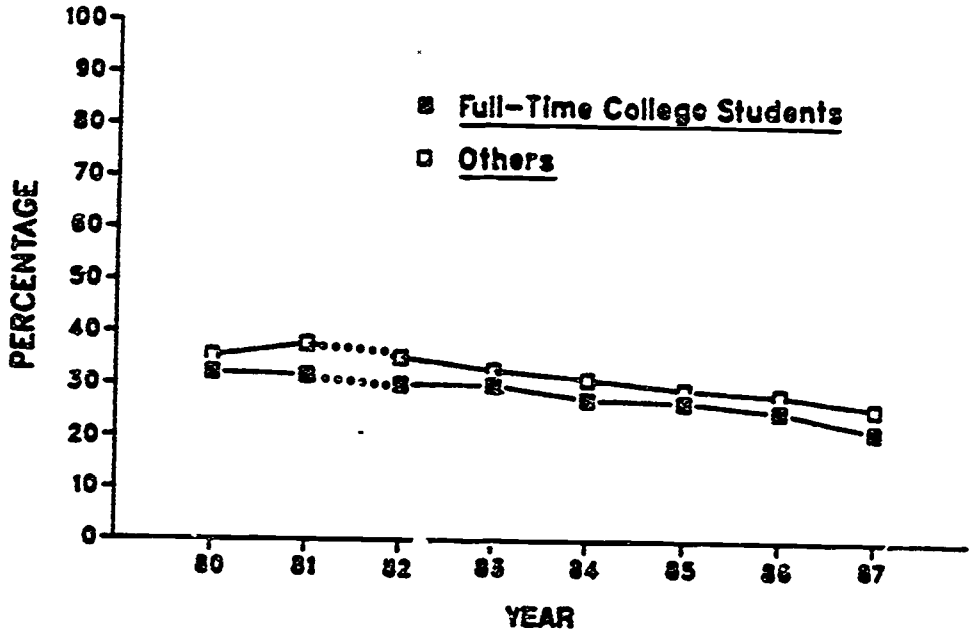
**Marijuana: Trends in Annual Prevalence Among College Students Vs. Others**
1-4 Years Beyond High School




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## FIGURE 4

**Any Illicit Drug Other than Marijuana:**
**Trends in Annual Prevalence Among College Students Vs. Others**
1-4 Years Beyond High School

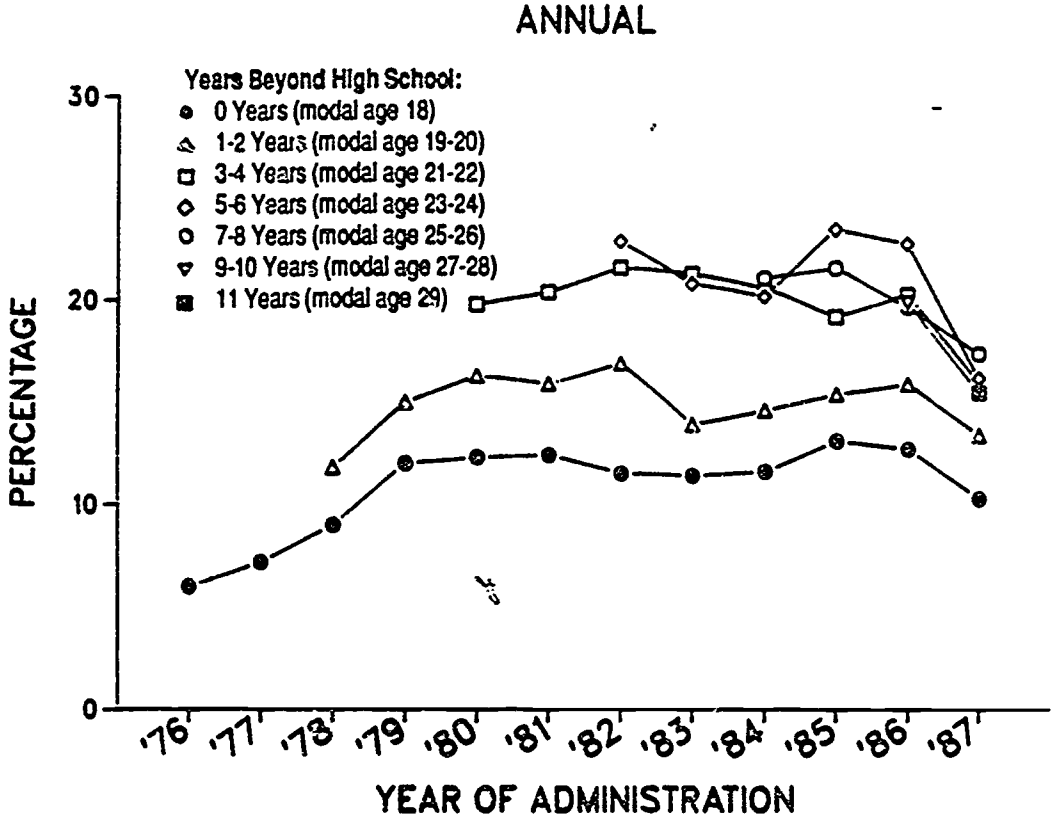



NOTE: The dotted lines between 1981 and 1982 denote a change in the amphetamines question.

SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## FIGURE 5

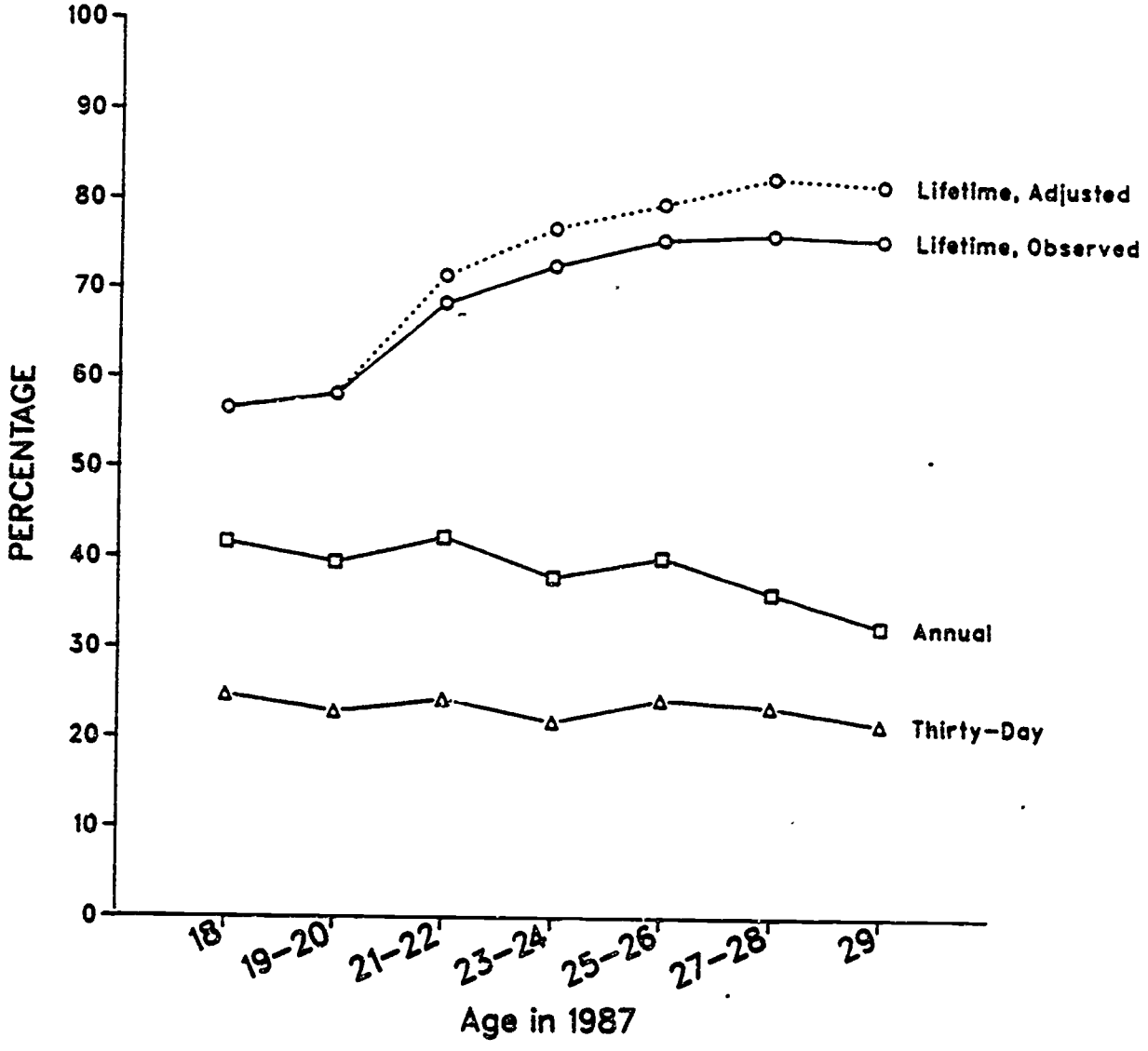
**Cocaine: Trends in Annual Prevalence Among Young Adults**
by Age Group




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## FIGURE 6

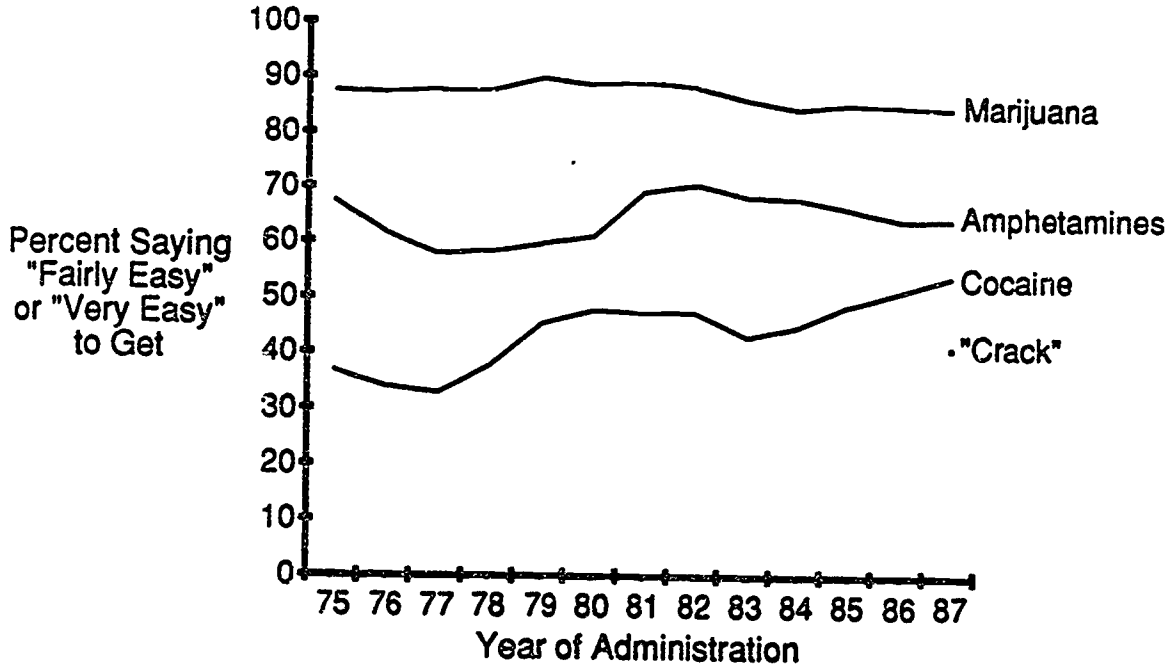
**Any Illicit Drug: Lifetime, Annual, and Thirty-Day Prevalence Among Young Adults, 1987 by Age Group**




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## FIGURE 7

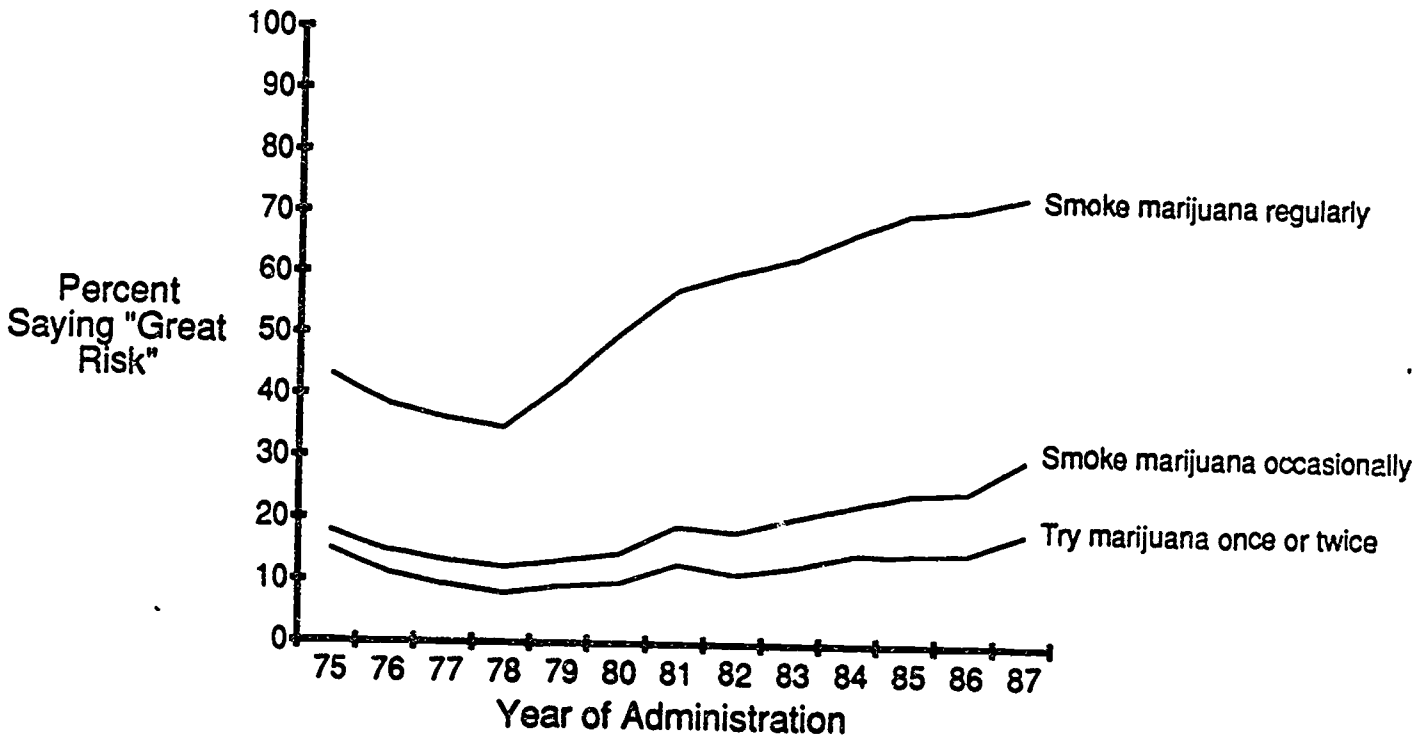
**Trends in Perceived Availability of Marijuana, Amphetamines, and Cocaine**
Reported by High School Seniors




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

**FIGURE 8**

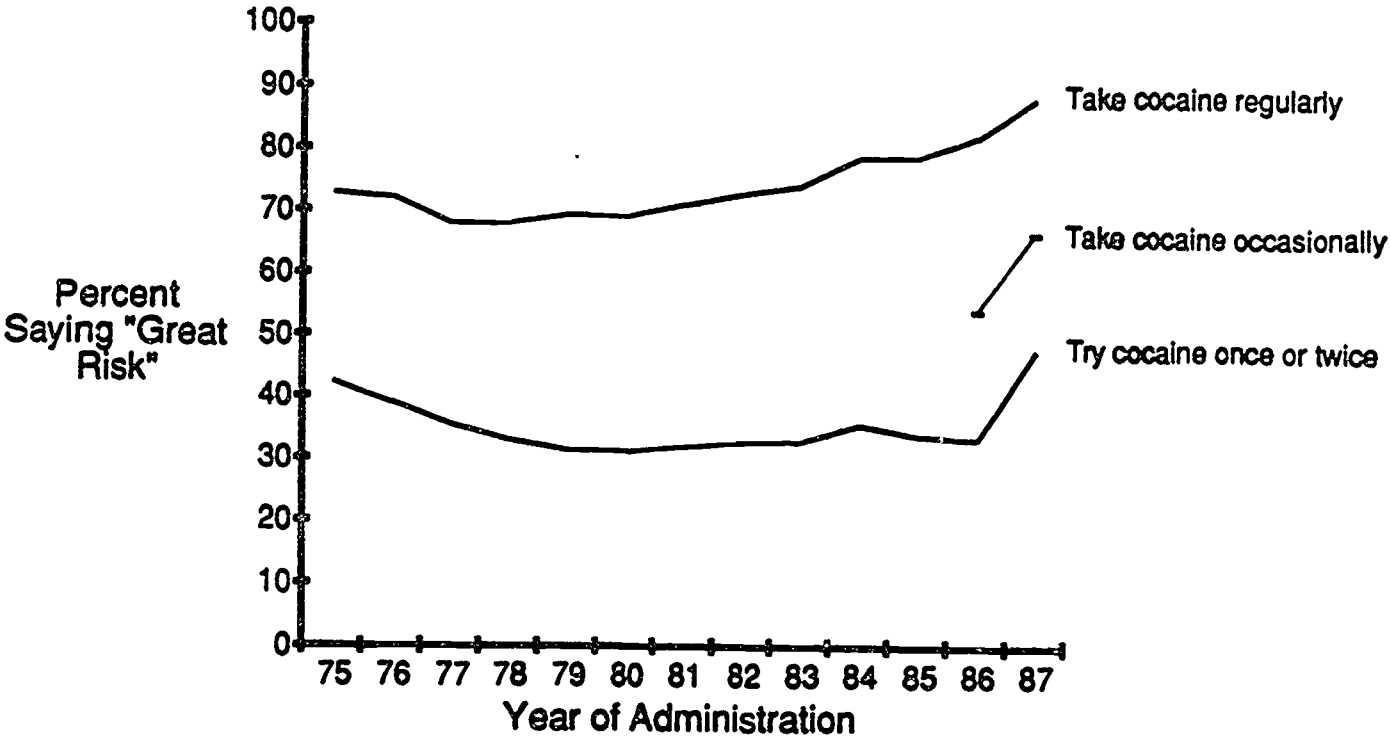
**Trends in Perceived Harmfulness of Marijuana**
Among High School Seniors




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

**FIGURE 9**

**Trends in Perceived Harmfulness of Cocaine**
Among High School Seniors




SOURCE: Monitoring the Future Study (Johnston et al., 1987)

## Table 1

### Exposure to Drug Use Prevention Elements in School Curricula
(entries are in percentages)

| | High school seniors in the class of: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
| *2E15. Have you had any drug education courses or lectures in school?* | | | | | | | | | | | | |
| *1. No* | 15.7 | 18.0 | 20.7 | 21.0 | 26.1 | 23.5 | 26.2 | 25.6 | 27.3 | 23.9 | 23.8 | 21.4 |
| *2. No, and I wish I had* | 5.1 | 3.8 | 4.5 | 4.7 | 5.6 | 4.2 | 6.0 | 4.3 | 3.4 | 4.3 | 3.9 | 4.0 |
| *3. Yes* | 79.2 | 78.3 | 74.8 | 74.4 | 68.3 | 72.4 | 67.8 | 70.1 | 69.2 | 71.7 | 72.3 | 74.6 |
| *N=* | *2494* | *2556* | *3000* | *2700* | *2710* | *2990* | *2975* | *2719* | *2688* | *2703* | *2568* | *2686* |
| **Asked only of those having courses or lectures** | | | | | | | | | | | | |
| *2E17. How many of the folowing drug education experiences have you had in high school? (Mark all that apply.)* | | | | | | | | | | | | |
| *A. A special course about drugs* | 22.7 | 24.8 | 24.7 | 22.8 | 20.5 | 22.3 | 20.2 | 21.4 | 23.7 | 20.6 | 24.1 | 22.1 |
| *B. Films, lectures, or discussions in one of my regular courses* | 75.7 | 74.6 | 74.7 | 77.7 | 76.3 | 76.8 | 75.5 | 77.1 | 78.0 | 76.2 | 77.4 | 75.1 |
| *C. Films or lectures, outside of my regular courses* | 28.8 | 28.2 | 25.5 | 22.3 | 21.0 | 23.9 | 25.2 | 23.9 | 26.8 | 30.0 | 30.4 | 36.6 |
| *D. Special discussions ("rap" groups) about drugs* | 24.7 | 24.1 | 25.1 | 22.1 | 22.4 | 20.8 | 20.7 | 21.2 | 21.3 | 19.1 | 22.5 | 25.9 |
| *N=* | *1979* | *1984* | *2227* | *1980* | *1820* | *2141* | *1987* | *1897* | *1841* | *1929* | *1840* | *1977* |

Source: Monitoring the Future

## Table 2

### Ratings of School Curricula in Drug Use Prevention
(entries are in percentages)

| Asked only of those having drug education courses or lectures | High school seniors in the class of: 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *2E16. Would you say that the information about drugs that you received in schoo' classes or programs has . . .* | | | | | | | | | | | | |
| *1. Made you less interested in trying drugs* | 50.5 | 54.0 | 51.5 | 52.4 | 55.3 | 58.8 | 56.9 | 54.7 | 54.1 | 55.6 | 57.2 | 54.9 |
| *2. Not changed your interest in trying drugs* | 45.6 | 43.0 | 45.2 | 44.0 | 41.9 | 38.5 | 40.3 | 42.5 | 43.3 | 41.6 | 40.0 | 42.8 |
| *3. Made you more interested in trying drugs* | 4.0 | 3.0 | 3.3 | 3.6 | 2.9 | 2.7 | 2.8 | 2.8 | 2.5 | 2.8 | 2.9 | 2.3 |
| *N=* | *1973* | *2004* | *2245* | *2006* | *1853* | *2163* | *2022* | *1921* | *1865* | *1953* | *1868* | *2010* |
| *2E18. Overall, how valuable were the experiences to you?* | | | | | | | | | | | | |
| *1. Little or no value* | 18.1 | 19.1 | 18.0 | 18.3 | 16.2 | 15.4 | 15.9 | 18.5 | 17.8 | 17.3 | 17.1 | 17.9 |
| *2. Some value* | 45.7 | 42.6 | 45.7 | 44.9 | 45.2 | 43.7 | 44.3 | 43.0 | 43.5 | 43.8 | 43.8 | 40.8 |
| *3. Considerable value* | 24.7 | 24.6 | 21.6 | 22.9 | 23.6 | 25.0 | 23.9 | 23.7 | 23.3 | 24.8 | 25.5 | 23.5 |
| *4. Great value* | 11.4 | 13.7 | 14.7 | 13.9 | 15.0 | 15.9 | 15.9 | 14.9 | 15.4 | 14.0 | 13.5 | 17.8 |
| *N=* | *1985* | *1989* | *2237* | *1990* | *1829* | *2159* | *1999* | *1907* | *1857* | *1939* | *1854* | *1991* |

Source: Monitoring the Future

## Table 3

### Exposure to Anti-Drug Commercials in the Media
(entries are in percentages)

| | High school seniors in the class of: |
|---|---|
| | 1987 |
| *The next question asks about anti-drug comercials or "spots" that are intended to discourage drug use.* | |
| *4E11. In recent months, about how often have you seen such anti-drug commercials on TV, or heard them on the radio?* | |
| *1. Not at all* | 5.7 |
| *2. Less than once a month* | 6.9 |
| *3. 1-3 times per month* | 22.1 |
| *4. 1-3 times per week* | 29.3 |
| *5. Daily or almost daily* | 25.8 |
| *6. More than once a day* | 10.2 |
| *N=* | *2726* |

Source: Monitoring the Future

## Table 4

### Ratings of Anti-Drug Commercials in the Media
(entries are in percentages)

| | High school seniors in the class of: 1987 |
|---|---|
| *4E12a. To what extent do you think such commerciuls have made people your age less favorable toward drugs?* | |
| *1. Not at all* | 22.3 |
| *2. To a little extent* | 32.8 |
| *3. To some extent* | 34.3 |
| *4. To a great extent* | 6.6 |
| *5. To a very great extent* | 4.0 |
| *N=* | *2724* |
| *4E12b. To what extent do you think such commercials have made you less favorable toward drugs?* | |
| *1. Not at all* | 25.5 |
| *2. To a little extent* | 19.9 |
| *3. To some extent* | 24.6 |
| *4. To a great extent* | 13.3 |
| *5. To a very great extent* | 16.5 |
| *N=* | *2689* |

Table 4 (cont'd)

| | High school seniors in the class of: 1987 |
|---|---|
| *4E12c. To what extent do you think such commercials have made you less likely to use drugs?* | |
| *1. Not at all* | 27.5 |
| *2. To a little extent* | 17.8 |
| *3. To some extent* | 21.8 |
| *4. To a great extent* | 12.5 |
| *5. To a very great extent* | 20.4 |
| *N=* | *2681* |
| *4E12d. To what extent do you think such commercials have overstated the dangers or risks of drug use?* | |
| *1. Not at all* | 48.8 |
| *2. To a little extent* | 16.4 |
| *3. To some extent* | 18.6 |
| *4. To a great extent* | 7.4 |
| *5. To a very great extent* | 8.8 |
| *N=* | *2693* |

Source: Monitoring the Future

## Table 5

### Perceived Levels of Drug Use Among Public Role Models in 1987
(entries are in percentages)

*4E09. These days, how many people in the following groups would you guess use illicit drugs (like marijuana, cocaine, etc.) occasionally or regularly?*

| | Professional Athletes | Rock music performers | Actors and actresses |
|---|---|---|---|
| *1. 0% to 10%* | 8.5 | 2.3 | 4.2 |
| *2. 11% to 30%* | 20.5 | 6.3 | 14.7 |
| *3. 31% to 50%* | 24.8 | 13.6 | 21.0 |
| *4. 51% to 70%* | 22.5 | 23.0 | 25.3 |
| *5. 71% to 90%* | 11.6 | 28.7 | 16.7 |
| *6. 91% to 100%* | 3.6 | 19.9 | 6.9 |
| *7. Have no idea* | 8.5 | 6.2 | 11.3 |
| *N=* | *2797* | *2797* | *2795* |

Source: Monitoring the Future

## Table 6

### Perceived Disapproval of Drug Use Among Public Role Models in 1987
(entries are in percentages)

*4E10. How many people in the following groups would you guess strongly disapprove of such illicit drug use?*

| | Professional athletes | Rock music performers | Actors and actresses | People your age |
|---|---|---|---|---|
| *1. 0% to 10%* | 9.7 | 24.4 | 12.5 | 11.7 |
| *2. 11% to 30%* | 25.9 | 28.6 | 25.0 | 20.9 |
| *3. 31% to 50%* | 22.0 | 17.3 | 22.6 | 24.4 |
| *4. 51% to 70%* | 14.8 | 11.5 | 14.6 | 19.8 |
| *5. 71% to 90%* | 11.3 | 4.4 | 7.2 | 10.0 |
| *6. 91% to 100%* | 4.7 | 2.5 | 3.4 | 3.7 |
| *7. Have no idea* | 11.6 | 11.2 | 14.7 | 9.4 |
| *N=* | *2784* | *2774* | *2746* | *2770* |

Source: Monitoring the Future

## Table 7

**Proportion of Seniors in 1987 Who Disapprove Strongly of Using Illicit Drugs Occasionally or Regularly**
(entries are in percentages)

| | Percent Who Strongly Disapprove |
|---|---|
| *Smoking marijuana occasionally* | 45 |
| *Smoking marijuana regularly* | 67 |
| *Trying cocaine once or twice* | 70 |
| *Using cocaine regularly* | 86 |
| *Taking heroin occasionally* | 89 |
| *Taking heroin regularly* | 92 |
| *Taking barbituates regularly* | 78 |
| *Taking amphetamines regularly* | 77 |
| *Taking LSD regularly* | 88 |

Source: Monitoring the Future

## Table 8

### Receptiveness to Parent Groups Opposed to Drugs
(entries are in percentages)

| | High school seniors in the class of: | | | | |
|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1986 | 1987* |
| *4E09. In some communities parents who are particularly concerned with drug or alcohol abuse among young people have formed groups of concerned parents to deal with these problems. In these groups parents try to become more informed and sometimes to set some common guidelines for young peoples' behavior.*<br><br>*In general, what do you think of the idea of having parents get together in groups such as these?* | | | | | |
| *1. A bad idea* | 6.4 | 6.6 | 5.1 | 5.1 | -- |
| *2. More bad than good* | 7.1 | 7.9 | 6.1 | 8.1 | -- |
| *3. Don't know or can't say* | 30.7 | 27.5 | 25.7 | 27.5 | -- |
| *4. More good than bad* | 23.3 | 23.0 | 22.6 | 23.8 | -- |
| *5. A good idea* | 32.5 | 35.1 | 40.4 | 35.5 | -- |
| *N=* | *2669* | *2659* | *2614* | *2600* | -- |

*Series dropped in 1987.

Source: Monitoring the Future

## Table 9

### Exposure to Parent Groups Opposed to Drugs
(entries are in percentages)

| | High school seniors in the class of: | | | | |
|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1986 | 1987* |
| *4E10. To the best of your knowledge, how many of your close friends have parents who are involved in such parent groups?* | | | | | |
| *1. None* | 73.0 | 70.5 | 70.0 | 69.1 | -- |
| *2. A few* | 18.8 | 20.3 | 20.1 | 22.1 | -- |
| *3. Some* | 7.3 | 8.2 | 9.4 | 8.0 | -- |
| *4. Most or all* | 0.9 | 1.0 | 0.5 | 0.8 | -- |
| *N=* | *2656* | *2660* | *2599* | *2599* | -- |
| *4E11. Has either (or both) of your own parents been involved in such a group?* | | | | | |
| *1. No* | 92.8 | 91.4 | 91.7 | 92.2 | -- |
| *2. Yes, in the past, but not now* | 4.9 | 5.3 | 5.7 | 5.1 | -- |
| *3. Yes, now* | 2.3 | 3.4 | 2.6 | 2.6 | -- |
| *N=* | *2595* | *2597* | *2558* | *2553* | -- |

*Series dropped in 1987.

Source: Monitoring the Future

## Table 10

### Ratings of Parent Groups Opposed to Drugs
(entries are in percentages)

| | High school seniors in the class of: | | | | |
|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1986 | 1987* |
| **Asked only of those whose parent(s) had been in such groups** | | | | | |
| *4E12. Has the involvement of your parent(s) in such a group had any impact on your own feelings about drug or alcohol use?* | | | | | |
| *1. Made me much less likely to use drugs or alcohol* | 25.2 | 23.0 | 26.7 | 27.9 | -- |
| *2. Made me somewhat less likely to use drugs or alcohol* | 12.7 | 15.7 | 16.4 | 16.9 | -- |
| *3. No impact either way* | 56.5 | 52.9 | 53.0 | 49.3 | -- |
| *4. Made me somewhat more likely to use drugs or alcohol* | 3.1 | 5.9 | 2.7 | 3.5 | -- |
| *5. Made me much more likely to use drugs or alcohol* | 2.5 | 2.4 | 1.2 | 2.4 | -- |
| *N=* | *297* | *345* | *308* | *313* | -- |
| *4E13. What about your relationship with your parents? Has their involvement in the parent group made your relationship better or worse?* | | | | | |
| *1. Much worse* | 8.9 | 8.6 | 6.5 | 6.9 | -- |
| *2. Somewhat worse* | 9.6 | 14.5 | 11.0 | 12.2 | -- |
| *3. No effect, don't know* | 50.4 | 50.0 | 49.2 | 45.5 | -- |
| *4. Somewhat better* | 13.9 | 10.9 | 20.4 | 20.7 | -- |
| *5. Much better* | 17.3 | 16.0 | 13.0 | 14.8 | -- |
| *N=* | *287* | *340* | *314* | *306* | -- |

*Series dropped in 1987.

Source: Monitoring the Future

## Table 11

### Involvement in Teen Groups Opposed to Drugs
(entries are in percentages)

| | High school seniors in the class of: | | | | |
|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1986 | 1987* |
| *4E14. In some communities young people themselves have formed groups aimed at avoiding drug use, such as Youth for Drug-Free Alternatives. How many of your close friends have been members of such a group?* | | | | | |
| *1. None* | 87.5 | 81.9 | 77.5 | 69.6 | -- |
| *2. A few* | 8.6 | 13.2 | 14.9 | 19.8 | -- |
| *3. Some* | 3.1 | 4.2 | 6.8 | 9.3 | -- |
| *4. Most or all* | 0.8 | 0.8 | 0.9 | 1.3 | -- |
| *N=* | *2651* | *2658* | *2605* | *2597* | -- |
| *4E15. Have you ever participated in such a group?* | | | | | |
| *3. Yes, now* | 1.6 | 3.2 | 3.7 | 5.2 | -- |
| *2. Yes, in the past, but not now* | 3.3 | 4.4 | 5.4 | 6.9 | -- |
| *1. No* | 95.1 | 92.4 | 90.8 | 88.0 | -- |
| *N=* | *2597* | *2616* | *2564* | *2540* | -- |

*Series dropped in 1987.

Source: Monitoring the Future